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July 15, 2005

Mary L. Cottrell, Secretary
Department of Telecommunications and Energy
One South Station, 2nd Floor
Boston, MA 02110

RE: D.T.E. 04-116- Investigation by the Department of Telecommunications and Energy On Its Own Motion Regarding the Service Quality Guidelines Established in Service Quality Standards for Electric Distribution Companies and Local Gas Distribution Companies, D.T.E. 99-84 (2001)

Dear Secretary Cottrell:

Please find attached the responses of Boston Edison Company, Cambridge Electric Light Company, Commonwealth Electric Company, d/b/a NSTAR Electric and NSTAR Gas Company (together with NSTAR Electric, "NSTAR") to the following information requests asked by the Department of Telecommunications and Energy in the above-referenced proceeding:

- DTE-LDC-3-3
- DTE-LDC-4-1
- DTE-LDC-4-2
- DTE-LDC-4-3
- DTE-LDC-4-4
- DTE-LDC-4-5
- DTE-LDC-4-6
- DTE-GAS-2-1
- DTE-GAS-2-2
- DTE-A-2-1

Please contact me, Cheryl Kimball or Kerry Britland at NSTAR if you have any questions regarding the filing.

Very truly yours,

John K. Habib

Enclosure
cc: Service List
Jody Stiefel
Joseph Rogers, Assistant Attorney General

Information Request DTE-LDC 3-3

Please comment on the advantages and disadvantages of calculating SAIDI and SAIFI statistics and penalties based on the performance of individual feeder circuits rather than system averages.

Response

There are several reasons that calculating SAIDI and SAIFI on a circuit-level basis is inappropriate.

(1) *Reliability cannot be validly measured on a "micro" level because many factors contribute to the "reliability" of individual circuits.* The electric distribution system is engineered, constructed and operated on an integrated basis. Distribution circuits are just one subset of the assets that must be maintained and operated by the Company to provide reliable service to customers. Focusing exclusively on these sub-components of the overall system will not provide a valid basis for assessing service reliability because there are many factors that affect the performance of distribution circuits, many of which are outside the control of the Company. When measured at the system level, the standard-deviation mechanism is designed to account for normal variation in performance data to ensure that penalties are assessed when overall performance falls outside the deadband. Thus, on a system-level basis, there is a level of confidence that penalties will be assessed *only* when service reliability has degraded as a result of the utility's actions and management choices.

The same is not true when "reliability" is measured at the circuit level. On an individual circuit-level basis, it will be necessary to evaluate the characteristics of each circuit and to identify the various reasons for poor performance in order to ensure that the *reliability* of the circuit is being measured (and penalized) and not the impact of other factors on the circuit performance. For example, over the past two years weather patterns have produced severe winter storms in December and January in the Cape Cod service area, which had an affect on the reliability performance of many of the overhead circuits in the area (i.e. customers served by these circuits may have experienced one or more service outages). To the extent that the outage events associated with those storms fall short of the criteria for an "excludable major event," these outage events will be captured in the system-wide SAIDI/SAIFI performance data for those years and will factor into the overall reliability of the system. However, on an individual basis, *there is no*

reliability issue other than the fact the lines were affected by the severe weather during the performance year.

In addition, there are many times the Company cannot take steps to address outage drivers because of local requirements and other factors over which the Company has only limited influence. This occurs with overhead circuits and the policies in place in many communities regarding tree trimming. There are many instances where municipalities or individual homeowners will not allow the trimming or removal of trees that persistently affect the performance of a particular circuit. Alternatively, outages on underground distribution circuits take longer to repair because of the need for extensive coordination with the municipality to perform street openings and because of the need to de-energize customers to perform circuit cutovers (which is difficult to do in cold or hot weather periods). In terms of street openings, the Company must work around street-opening moratoriums in place from November through March of each year and prohibitions on street openings for a five-year period on newly paved streets. Given these limitations, the Company may not be able to access the line for some period of time to make necessary repairs. In these cases, it would be inappropriate to penalize the Company for "reliability" infractions when it is working diligently to repair the situation but is stymied by municipal requirements. Because the characteristics and outage drivers of each circuit would need to be examined in evaluating circuit reliability, it is inappropriate to apply an SQ measure that is valid only when performance data can be objectively measured and quantified.

SAIDI/SAIFI at a system level are metrics that are used across the electric utility industry to assess overall reliability and restoration-response levels. A significant advantage of using a system-level metric is that it can be trended in a consistent way over time to show the relative improvement or degradation across the population of circuits. Therefore, measurement of SAIDI/SAIFI statistics on a system-wide basis is appropriate.

(2) *Reliability statistics are function of the number of customers connected and other characteristics of the individual circuit.* A deficiency in measuring SAIDI/SAIFI at the circuit level is that the performance of an individual circuit may appear to be poor because of the relatively small number of customers that it serves. The number of customers per circuit is widely variable. A circuit with fewer customers would appear to be less reliable than a circuit serving a greater number of customers, even if, in reality, the circuit with fewer customers is operating on a more reliable basis. For example, assume that two circuits, one

serving 100 customers and one serving 1,000 customers, each had outages of 10 minutes in duration over a year. In calculating the SAIDI for each circuit, the circuit serving 100 customers will have a SAIDI of 0.1, while the circuit serving 1,000 customers will have a SAIDI of 0.01. In relation to each other, the circuit serving the fewer number of customers appears to be less reliable; however, in reality, both experienced outages of the same duration. In fact, there is substantial variation in the characteristics of distribution circuits used to serve customers on the Company's system, which would preclude a determination as to the relative reliability of a given circuit based on SAIDI/SAIFI statistics. These characteristics include the length of the distribution circuit, the number of customers served, whether the circuit is underground or overhead, whether the circuit is exposed to environmental factors that affect performance and whether there are factors that impede the Company's ability to perform needed repairs and maintenance. Therefore, using circuit-based SAIDI or SAIFI statistics to determine SQ penalties would produce flawed results.

(3) *The system is constantly reconfigured in the course of maintaining and upgrading the distribution system often making it impossible to track circuit performance on a consistent basis over time.* As customer load requirements on the distribution system grow and change, the Company performs upgrades and reinforcements to the system that frequently involve reconfigurations of existing circuits. Circuits may be extended, shortened, converted and/or splits over time to reduce or prevent overloading or to fit in with improvements in engineering practices. When a new circuit is added, two or three other circuits may be reconfigured to serve different customer load. An expansion of a substation can require the reconfiguration of five or six circuits and the addition of a new substation can involve the reconfiguration of as many as 40 distribution circuits. Therefore, unlike with system-wide SAIDI and SAIFI, the Company would not be able to consistently analyze reliability trends by circuit over time, and therefore, a circuit-level SAIDI or SAIFI figure would not be appropriate as an indicator of service reliability.

(4) *Penalizing performance on a circuit-level basis will establish misguided signals regarding system investment.* The Company has an obligation to maintain reliable service to customers in the most cost-effective and efficient manner possible. To fulfill this obligation, the Company plans its distribution investments on a system-wide basis, based on all available data regarding the performance of a variety of components within the distribution system as well as customer usage patterns and forecasted load growth. Penalizing utilities for individual circuit performance will send the signal that individual distribution

circuits should be upgraded at the expense of other projects that may have a greater impact on the overall level of service to customers in the long run. The Company uses a comprehensive process for identifying, planning and prioritizing system upgrades (see, response to Information Request DTE-LDC-4-1). Using this process the Company has achieved a 39 percent reduction in the frequency of outages and a 34 percent reduction in the duration of outages since 2001. During this time period the Company also completed numerous projects targeted at improving performance on a circuit-level, as well as addressing "pockets of poor performance" that emerged over that time period. Circuit-level SAIDI/SAIFI data will serve only to provide a distorted and inaccurate view of a company's investment in service reliability and will inappropriately divert resources to a sub-component of the system to the detriment of the overall customer base.

Information Request DTE-LDC 4-1

Do the current system wide SQ measures permit pockets of poor performance in terms of SAIDI, SAIFI, and CAIDI? If so, explain how such poor performing pockets can be identified, reduced, and eliminated.

Response

The Department's current SQ measures neither permit nor prevent "pockets of poor performance." The current SQ measures are appropriately designed to quantify and track the performance of a utility system in order to provide the Department (and customers) with tool for assessing the performance trends of the utility and to indicate whether the utility is managing its overall operations in a way that provides safe and reliable service to its customer base. The SQ measures are not intended or designed to dictate the specific investments to be made on a utility system. In fact, it is not feasible or appropriate to make judgments about a system's performance (or management's approach to running its operations) based on isolated system components because the system is necessarily managed as a whole for the benefit of the entire customer base.

In that regard, the electric distribution system is engineered, constructed and operated on an integrated basis across geographic areas. The integrated system will always encompass components that perform better or worse than other system components as a result of a number of factors, including: weather and environmental factors, interference by third parties (e.g., accidents affecting electric utility poles, dig-ins to underground equipment), system age or localized load requirements and usage patterns, to name just a few. Thus, the factors driving "poor performance" in a particular area must be carefully evaluated to determine whether an actual "reliability" issue exists and, if so, what the nature of that issue is and what the best fix would be. SQ measures are designed to enable an objective quantification of performance and are not appropriate for application where close attention must be paid to the factors driving performance.

Therefore, to operate its system on a safe and reliable basis, NSTAR Electric uses a comprehensive planning process to monitor and assess the performance of the distribution system components and to prioritize and implement upgrades and reinforcements *that will have the greatest benefit for the system* in terms of increasing the reliability of service to customers. Thus, if the Company identifies a situation where it can spend $100,000 to upgrade a circuit serving 5,000 customers or $100,000 to upgrade a circuit serving 10 customers, it will prioritize its efforts to first upgrade the circuit serving 5,000 customers (all else being equal), while continuing to work to identify the most cost-effective solution to the circuit serving 10 customers.

This is not to say that it is not important to identify and eliminate "pockets of poor performance," even for a group of just 10 customers. To the contrary, NSTAR Electric continually compiles performance data to identify "poorest performing circuits" and other under-performing assets and uses that information to ensure that changes are made to provide customers with reliable service. Many times, smaller problems are solved in the course of implementing larger system upgrades, which take time to design and construct. For this reason, it is not feasible or cost-effective to address "pockets of poor performance" in isolation from the larger system planning effort.

In that regard, there are three principle tiers involved in the overall process: (1) data collection, which involves collecting, monitoring and organizing data relating to the condition and performance of the electric system; (2) system assessment and planning, which involves evaluation of system-performance data, identification of system priorities, and planning and scheduling of system-maintenance and replacement activities; and (3) implementation, through which the Company carries out its system maintenance and replacement activities in accordance with industry and NSTAR Electric design and construction standards.

The first step in the overall process is the collection of both performance and condition data. The performance data collected includes equipment failure information and customer outage information. The outage information collected includes circuit number, failure location, customers affected, town where the customers are located, cause of the outage and outage duration. System condition information is collected through the various inspection and maintenance programs, equipment failure analysis and from field observations of various Company personnel.

This data is continually analyzed in a variety of different ways to identify poor performing circuits, equipment, smaller pockets of poor performance within a circuit, voltage level (various primary levels and secondary level) and system type (overhead, underground, URD, etc.). Following extensive analysis, maintenance and capital projects are identified to maintain and improve the integrity and performance of the distribution system. The Company then employs a prioritization procedure to ensure that projects and activities that will have the greatest impact on system performance are undertaken on a priority basis. Reliability projects are prioritized for completion based on a number of factors including, average equipment failure rates, actual failure history, average customer load, the number of customers connected, and the estimated improvement in reliability.

The Company's experience has shown that the characteristics of the distribution system and the service territory it serves are very diverse, and therefore, a variety of maintenance and reliability programs are needed to properly address the particularized needs of areas on the system. As a result, the Company's reliability programs are based on a number of factors such as overall circuit performance (circuit upgrade program), outage drivers such as tree trimming and cable re-conductoring and specific reliability issues (URD Reliability Program, Secondary Main Replacement Program and Overhead and Underground Rebuild Projects). Moreover, the Company continually reviews the effectiveness of its reliability programs and incorporates analysis relating to major system events such as snowstorms, lightning storms and heat waves to further evaluate the effectiveness of the distribution system maintenance and capital programs. In addition, the Company conducts monthly reliability meetings within individual districts to ensure that any localized reliability issues are addressed through the system planning process.

In the three years ending December 31, 2004, the Company achieved a 39 percent reduction in the frequency of outages and a 34 percent reduction in the duration of outages. During this time period the Company also completed numerous projects targeted at improving performance on a circuit-level, as well as addressing "pockets of poor performance" that emerged over that time period. These results underscore the effectiveness of the Company's system planning process and the commitment of the Company to serve its customers on a reliable basis.

Information Request DTE-LDC 4-2

Is it feasible for the current SQ measures SAIDI, SAIFI, and CAIDI to be at circuit level instead of at a system-wide level? Will this capture pockets of poor performance? If so, please describe.

(a) how can such change be undertaken; and

(b) what would be the advantage and disadvantage to the customers and to the distribution companies?

Response

It is not feasible to measure SAIDI, SAIFI, and CAIDI at the circuit level instead of at a system-wide level. Please see the Company's response to DTE-LDC -3-3.

Information Request DTE-LDC 4-3

If the answer to DTE LDC 4-2 is no, please provide an alternative to DTE-LDC 4-2 that captures poorly performing circuits.

Response

The Department's current SQ Guidelines already require the submission of data on an annual basis regarding the identification of poor performing circuits. Circuits are included in this list if:

(1) The circuit has a sustained a SAIDI or SAIFI value for a reporting year that is among the highest (worst) ten percent of the Company's feeders for any two consecutive reporting years; or

(2) The circuit has sustained a SAIDI or SAIFI value for a reporting year that is more than 300 percent greater than the system average of all feeders in any two consecutive reporting years.

The Department receives information from each distribution company on annual basis that allows it to monitor poor performing circuits and to identify areas experiencing service outages. This information is the best means possible to identify areas of concern. Beyond this, the evaluation and elimination of poor performing circuits must be undertaken in the context of a company's overall system planning process because it is not appropriate to make judgments about a system's performance (or management's approach to running its operations) based on isolated system components.

Information Request DTE-LDC 4-4

Please refer to Attachment A: Problem Circuit Remediation Index (PCRI).

(a) Would this proposed penalty measure improve the performance of problem circuits?

(b) What improvements could be made to the proposed program to enhance it?

(c) Is there an alternative method of improving performance of poorly performing circuits?

(d) The Department has allocated 45 percent of the potential penalty pool to SAIDI and SAIFI in Docket 99-84. If the Department was to approve the PCRI program, what percentage of the potential penalty pool should be allocated to PRCI?

Response

(a) The establishment of circuit-level performance penalties will have only one impact, which is that electric utilities will reprioritize their system upgrade projects to target these circuits and will need to forego other system projects that may have a higher priority under the existing system planning process. As discussed in the Company's responses to DTE-LDC-3-3 and DTE-LDC-4-1, the Company plans its system on a comprehensive basis taking into consideration all system components and associated load requirements. Therefore, for all of the reasons stated in DTE-LDC-3-3 and DTE-LDC-4-1, the Company believes that its planning process would result in a superior outcome (as compared to the PCRI program) in terms of achieving a high level of reliability for the greatest number of customers.

In addition, the formula set forth in the Attachment A will not work because circuits with a small number of customers will appear as "poorer" performers than circuits having the same number of outages, but serving a larger number of customers.

(b) There are no improvements that could be made to the "proposed program" to enhance it because it is inappropriate to measure reliability in relation to isolated components of the integrated electric system and without regard for the factors causing outages on particular circuits.

(c) Please see the Company's response to DTE-LDC-4-3.

(d) The PCRI is not a legitimate means of measuring the Company's service-quality performance or the "reliability" of the NSTAR Electric system. Nor is the PCRI an appropriate mechanism to drive investment in system upgrades. Accordingly, the PCRI should not be a measure that would be subject to performance penalties.

Information Request DTE-LDC 4-5

Please refer to Attachment B: Major Safety Incident Index (MSSII).

(a) Is it feasible for the Department to substitute this new MSII penalty measure for its existing Lost Work Time Accident measure for Electric Distribution Companies?

(b) What improvements could be made to proposed program?

(c) If the Department were to improve the MSII penalty measure, what percentage of the potential penalty pool should be allocated the MSII measure?

Response

(a) The Major Safety Incident Index ("MSII") should not replace the Department's existing safety-related metric (Lost Work Time Accidents) for several reasons. First, Lost Work Time Accidents is an industry standard that appropriately indicates the overall safety of the utility's working environment on an objective basis. Second, the MSSII would include incidents that are not necessarily within the control of the Company. Specifically, the MSII would include any incident "occurring in the conduct of day-to-day business operations of the utility that leads to: (1) human injury that requires the attention of a physician; (2) injuries to domesticated animals or livestock; or (3) property damage exceeding $5,000. As a result, this definition would include incidents not caused by actions of the utility and not necessarily indicative of any type of deficiency in the utility's performance.

For example, if a driver collides with a company-owned vehicle on its way to a service call and the driver or a passenger of either vehicle requires the attention of a physician, the MSII would count that incident against the company. Thus, all events occurring within a performance year would need to be reviewed on a subjective basis to determine whether the event is related to the utility's actions and, if so, whether it indicates a deficiency in the utility's performance. In addition, the Department would have to investigate every incident in order to properly compare the dollar impact of the damage, the nature of the incidents and the extent of the damage and to make a finding that these variables have a proper nexus with the Company's operational performance to warrant a penalty. In fact, property damage and incidents involving injury to humans or animals are not necessarily susceptible to objective year-to-year comparisons in terms of identifying and quantifying performance. Matters that require subjective review are not appropriate for inclusion in a SQ measure, which is designed to provide an objective quantification of utility performance. Therefore, this data is not of the type that can provide a basis for a monetary penalty.

In addition, the MSII appears to be targeted, at least in part, to penalizing the Company for "stray-voltage" related incidents that may cause injury to domesticated animals. The Company has devoted a considerable level of resources to this issue and, as will be reporting in the forthcoming report of the Joint Task Force on Electrical Safety (commenced by NSTAR Electric and the City of Boston), the majority of stray voltage events on the NSTAR Electric system have proven to be the responsibility of electrical-equipment owners other than NSTAR Electric and/or have been caused by third-party damage to electric facilities. Therefore these events are in no way appropriate for inclusion in an SQ measure.

In fact, all of the penalty measures established by the Department in its current SQ Guidelines, including the existing Lost Work Time Incident metric, are objectively quantified metrics where the Department has established rules regarding the collection of data statistics and no subjective review of the data is required or allowed. In that regard, the Department has stated that "[w]hen properly collected and interpreted information shows that SQ has not achieved, or has fallen below, the benchmark for the measured activity, then ratepayers are conclusively presumed to have been denied the service they are due." Interim Order at 43. A conclusive presumption that customers have been denied service cannot be made based on the occurrence of any of the incidents included in the MSII.

(b) There are no improvements that could be made to the "proposed program" to make the measure valid and appropriate for use in assessing penalties on the electric and gas utilities.

(c) The MSII is not a legitimate means of measuring the Company's service-quality performance or the "safety" of the NSTAR Electric system. In fact, the Company is not aware of any concern or issue that provide a basis for a change in the existing Lost Work Time Accident SQ measure or the damage and injury reporting requirements. If such a concern exists, it would be more appropriately addressed through a measure or reporting requirement that is directly targeted at resolving that issue. Accordingly, the MSII should not be a measure that would be subject to performance penalties.

Information Request DTE-LDC 4-6

Do the Companies have any alternative penalty measures that would accomplish the goals of PCRI and MSII? Describe.

Response

The goals of the PCRI and MSII appear to be to establish a mechanism to allow the Department to penalize utilities for (1) individual circuit performance, and (2) injuries or property damage occurring within the normal course of business, respectively. To achieve these goals, the PCRI and MSII simply incorporate elements of SQ measures and reporting requirements that are already part of the Department's current SQ Guidelines. In contrast, the Department's existing Lost Time Work Incidents and SAIDI/SAIFI metrics are industry standards that are effective in measuring safety and reliability performance trends of electric and gas distribution systems.

Information Request DTE-GAS-2-1

Is it feasible to shorten the one hour odor call response time in the SQ Guidelines? Explain.

Response

It is neither feasible nor appropriate to shorten the one-hour odor call response time in future SQ Guidelines. There is no evidence to suggest that any gas company operating in Massachusetts places anything less than the highest priority in responding to odor calls, as evidenced by the fact that each of the gas companies in Massachusetts has had recent and historical success in meeting and exceeding the Department's existing benchmark of responding to odor calls within 60 minutes at least 95 percent of the time. Accordingly, there is no reason to conclude that shortening the odor call response time will lead to any increase in SQ performance for this category. Moreover, should the Department measure SQ performance for this category through an even more rigorous standard than is currently in effect, other areas of company operations may be affected because of the reallocation of resources that would likely be necessary to meet the standard. The Department's current standard has been effective because it is both stringent and reasonably achievable and should not be changed arbitrarily.

Information Request DTE-GAS-2-2

Is it feasible to raise the threshold for the percentage of odor calls responded to in less than an hour? Explain.

Response

Please refer to the Company's response to DTE-GAS-2-1.

Information Request DTE-A 2-1

Would it be appropriate in the future for companies to enter into settlements or other agreements which would permit parities to deviate from the established SQ Guidelines? Explain.

Response

NSTAR Electric supports the idea of allowing companies to enter into settlements or other agreements or to make a filing with the Department to establish an SQ Plan more specific to NSTAR's operations.

In light of differences among the utilities in customer demographics, geography and infrastructure and information systems, there would be benefits in allowing companies to adapt SQ measures on an individualized basis. As long as the Department can determine that a proposed SQ Plan would measure a utility's performance on a consistent basis over time and would allow the Department to observe performance trends and to detect when service quality is declining, then the SQ Plan would achieve the Department's policy objectives, regardless of whether it "deviates" from the previously established set of SQ Guidelines.